

Claims

We claim:

- Sub
Ar
1. A configurable RAID subsystem, comprising:
 - 2 a user data array connected to a user application via a block I/O path; and
 - 3 a configuration array connected to a configuration application via the same
 - 4 block I/O path.
 2. The configurable RAID subsystem of claim 1 wherein the user data array processes user data access commands executed by the user application, and the configuration application processes configuration commands, the user data access commands and the configuration commands communicated to the user data array and the configuration array respectively via the block I/O path.
 3. The configurable RAID subsystem of claim 1 further comprising:
 - 2 block storage devices to physically store user data of the user data array.
 4. The configurable RAID subsystem of claim 1 wherein the user data array includes a dynamic identification assigned by the configuration array, and the configuration array includes a static configuration identification.
 5. The configurable RAID subsystem of claim 1 further comprising:
 - 2 means for assembling and executing a configuration write command in the
 - 3 configuration application;
 - 4 means for processing the configuration write command in the configuration
 - 5 array; and

means for returning status on the processing of the configuration write command to the configuration application via the block I/O path.

6. The configurable RAID subsystem of claim 1 wherein the configuration application reads a predetermined block of the configuration array application to obtain an associated application identification.

7. The configurable RAID subsystem of claim 6 further comprising:

means for assembling and executing a configuration write command in the configuration application, the configuration write command including a request to read a configuration information data structure and the application identification;

means for processing the configuration write command in the configuration array;

means for assembling and executing a configuration read command in the configuration application, the configuration read command including the application identification;

means for processing the configuration read command in the configuration array; and

means for returning the requested configuration information data structure and status to the configuration application.

8. A method for configuring a RAID subsystem, comprising:

processing user data access commands executed by a user application in a user data array of the RAID subsystem connected to the user application by a block I/O path; and

processing configuration commands executed by a configuration application in a configuration array of the RAID subsystem connected to the configuration application via the block I/O path.

9. The method of claim 8 further comprising:

storing user data of the user data array on block storage devices.

10. The method of claim 8 further comprising:

assigning a dynamic identification to the user data array by the configuration array; and

assigning a static identification to the configuration array.

11. The method of claim 8 further comprising:

assembling and executing a configuration write command in the configuration application;

processing the configuration write command in the configuration array; and

returning status on the processing of the configuration write command to the configuration application.

12. The method of claim 8 further comprising:

reading a predetermined block of the configuration array by the configuration application to obtain an associated application identification.

13. The method of claim 8 further comprising:

assembling and executing a configuration write command in the configuration application, the configuration write command including a request to read a configuration information data structure and the application identification;

5 processing the configuration write command in the configuration array;
6 assembling and executing a configuration read command in the
7 configuration application, the configuration read command including the
8 application identification;
9 processing the configuration read command in the configuration array; and
10 returning the requested configuration information data structure and status to
11 the configuration application.

106151451201
14. The method of claim 8 further comprising:

receiving a configuration write commands in the configuration array;
locking associated internal data structures of the RAID subsystem;
processing the configuration write command;
unlocking associated internal data structures of the RAID subsystem; and
returning status to the configuration application upon completion of the
processing.

1 15. A configurable RAID subsystem, comprising:

2 a user data array for processing user data access commands executed by a
3 user application;
4 a configuration array for processing configuration commands executed by a
5 configuration application; and
6 a single block I/O path connecting the user data array to the user application
7 and the configuration array to the configuration application.

1 16. The configurable RAID subsystem of claim 15 wherein the user data array
2 includes a dynamic identification assigned by the configuration array, and the
3 configuration array includes a static configuration identification.

- 1 17. The configurable RAID subsystem of claim 15 further comprising:
2 a plurality of user data arrays each having an associated dynamic
3 identification assigned by the configuration array; and
4 a plurality of configuration applications each having an associated application
5 identification assigned by the configuration array.
- 1 18. The configurable RAID subsystem of claim 15 wherein the user application
and the configuration application execute only block I/O write and read commands
to access the user data array and the configuration array via the block I/O path.